Experimental study the effect of speeds in wear using fourball tribotester

Abstract

Tribology is a multi-discipline field of knowledge. The understanding is on the changes of speeds that occur in the bulk materials as the materials surface move relative to each other. The researchers are required to better understand the phenomena occurring in the different subsystems, the complex reactions occurring on the surface and in the fluid present between the moving surfaces. Today, the materials used in machinery, automotive and aerospace industry require high performance in wear resistance and friction, especially, for the material surface that meets with the outside environment. In the industry sector, the different sliding speeds may cause different damage to the machines. Thus, in this research, the author would like to investigate the effect of different sliding speeds on wear and friction. Experiments were conducted to determine the effect of the sliding speed in wear and friction by using fourball tester. The sliding speeds in the range of 800rpm to 1400 rpm were studied through experiments in wear and friction lubricated with Refined, Bleached, and Deodorized (RBD) Palm Olein. The duration time for the experiment was one hour at 75degree Celsius with applied load of 40kg. RBD Palm Olein is known as refined, bleached and deodorized oil which exists in liquid state at room temperature. From the result, author found out that the wear scar diameter is increased as the sliding speeds increased.